Sjöstrand further noted that:

> When the cytoplasmic membranes are cut obliquely or are oriented parallel to the plane of the section the basic membrane does not show up distinctly or is not visible at all due to its low electron scattering capacity. Then, only the opaque particles are observed and the cytoplasm appears as consisting only of this component. (p. 405)

From the fact that the particles do not appear in freeze-dried preparations but appear very opaque in osmium tetroxide preparations, he proposed that they react very strongly with osmium. Late in the paper Sjöstrand seemed to jump to a conclusion about the function of these particles. From the fact that they "represent the dominating structure of the cytoplasm of the exocrine pancreas cells," he inferred that "they are structures of importance for the enzyme synthesis in these cells" (412). This correct inference is surprising both in light of his failure to offer justifications for it and the fact that in the case of the mitochondrion Sjöstrand resisted any speculation about function.

Sjöstrand also linked these paired membranes to structures identified by other electron microscopists – the "interdigitating cell membranes" of Pease and Baker (1950) and the intracellular filaments or lamellae of Dalton et al. Sjöstrand commented that "the micrographs of these authors are, however, not of the quality to allow a detailed description and a correct interpretation of these structures" (p. 448). In particular, he rejected the interpretation that these structures are filaments. In his paper with Rhodin, he claimed:

> It is quite obvious that we are dealing with membranes and not filaments from the fact that they may be followed without interruption through the whole basal cell zone, the chance to hit a filament so exactly along its entire length being negligible. In addition, there have never been any indications of cross-cut filaments. (p. 448)

In the paper with Hanzon he advanced a further argument – the number of membranes was always odd, due to the membrane closest to the nucleus not having a partner. This would not be the case if the structures were filaments.

At a symposium at the Eighth Congress of Cell Biology in 1954, Sjöstrand related his views to those of Porter and Palade:

> It is of course very threatening [tempting?] to generalize regarding these different structures and to consider for instance the opaque particles as a new component of the cytoplasm of general occurrance (sic) (Palade, 1953) with a common chemical and functional significance. For the moment we may not generalize further than accepting that in the cytoplasm there exist granules